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NEDC Model Contract Specification April 2008

Organization/Agency Responsible:
Northeast Clean Diesel Collaborative (NEDC)

Contact: Debbie Edelstein
617-259-2080
dedelstein@nescaum.org or

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This contract specification provides a comprehensive model that is technically sound and grounded in field experience. It addresses not only the level of emission control, but also key considerations such as idling, exemptions, and compliance. NEDC encourages that this contract specification be adopted for use by public and private developers alike, especially those building projects located in urban areas or in close proximity to especially sensitive receptors.

DIESEL EMISSION CONTROLS IN CONSTRUCTION PROJECTS

MODEL CONTRACT SPECIFICATION

April 2008

Introduction

In the last few years, hospitals, universities, municipalities, and transportation agencies in the Northeast have recognized the importance of controlling diesel emissions from construction projects and have included retrofit requirements in their contracts. Given the momentum and the emerging patchwork of approaches, the Northeast Diesel Collaborative (www.northeastdiesel.org) decided to offer guidance to private institutions and public entities interested in adding emission control measures to future construction contracts. Our goal is to encourage more institutions and agencies to adopt contract specifications and to promote the widespread use of emission controls in the construction sector.

The contract specification below provides a comprehensive model that is technically sound and grounded in field experience. It addresses not only the level of emission control, but also key considerations such as idling, exemptions, and compliance. It incorporates improvements in retrofit technology already underway to meet both market demand and tighter federal standards for new engines.

This model specification recommends that institutions and agencies ("developer" in the text below) undertaking large construction projects:

- **Require the highest level of emission control available**. The model sets reduction thresholds that reflect the current state of retrofit technology for different types of engines while acknowledging that the technology continues to improve. It therefore links an increased level of control—from technology that achieves at least a 20% reduction in diesel particulate matter (PM) to technology that achieves at least an 85% reduction—to the dates when new engines must comply with the higher standards and are available as an option. The document also signals to contractors that a higher level of control is likely to be required in later contracts and thus encourages early adoption of the more advanced technology where feasible.
- **Include the widest range of diesel onroad vehicles, nonroad equipment, and generators**. Although high-horsepower engines emit more pollutants, there are far more low-horsepower engines in the fleets.
- **Implement and/or enforce idle-reduction policies.**
- **Require the use of ultra-low sulfur diesel fuel,** which is widely available.
- **Fully pay for the retrofits**, which will reduce the air-quality impacts of the projects.

NEDC acknowledges that existing contract requirements, policy adoption processes, procurement rules, and financial resources differ considerably among the institutions, municipalities, and state agencies in the region and therefore affect options for developing or amending a retrofit program. For example, those with successful clean construction initiatives may revise or expand them only through a stakeholder process. In creating a new program, some may need to adopt a narrower scope (e.g., picking a higher project dollar threshold or initially targeting particular horsepower ranges) while others

opt for broader or more aggressive coverage (e.g., requiring retrofits in all projects regardless of their budget). The model provides a robust standard and an implementation framework that can be adapted for consistency with established institutional protocols.

The NEDC Steering Committee wishes to thank the representatives from the emission control manufacturers, environmental organizations, private companies, construction industry, state agencies, and U.S. EPA who contributed to the development of this document, either by fully participating in the work of the task force or by offering valuable perspective on key elements.

MODEL CONTRACT SPECIFICATION

NEDC recommends that contracts for projects with budgets of $2 million or more and of more than nine months' duration require the diesel control measures outlined below. As the public health risks from exposure to diesel exhaust are of paramount concern, institutions, municipalities, and agencies that want a phased adoption of contract requirements could focus initially on projects located either (1) in urban areas or (2) within 500 feet of a school, hospital, daycare facility, elderly housing, convalescent facility, or similar facility.

1. Diesel Emission Control Technology

a. Diesel Onroad Vehicles

All diesel onroad vehicles used on the project for more than 10 total days must have either (1) engines that meet U.S. Environmental Protection Agency (EPA) 2007 onroad emissions standards or (2) emission control technology verified by EPA or the California Air Resources Board (CARB) to reduce PM emissions by a minimum of 85%.[1,2]

b. Diesel Generators

i. Until December 31, 2009, all diesel generators on site for more than 10 total days must be equipped with emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 20%.

ii. Beginning January 1, 2010, all diesel generators on site for more than 10 total days must be equipped with emission control technology verified by EPA or CARB to reduce PM emissions by a minimum of 85%.

c. Diesel Nonroad Construction Equipment

i. Until December 31, 2012, all diesel nonroad construction equipment with engines 75hp and greater on site more than 10 total days must have either (1) engines that meet EPA Tier 4 nonroad emissions standards, or (2) emission control technology verified by EPA or CARB for use with nonroad engines to reduce PM emissions by a minimum of 20%.[3]

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[1] In all instances "verified" means verified for use with the specific onroad, nonroad, or generator engine. For EPA's list of verified technology: http://www.epa.gov/otaq/retrofit/retroverifiedlist.htm. For CARB's list of verified technology: http://www.arb.ca.gov/diesel/verdev/verifiedtechnologies/vt.htm.

[2] Vehicles with diesel oxidation catalysts or similar emission control technology installed as original equipment meet the 20% reduction threshold and are deemed compliant through December 31, 2009, after which they must meet the minimum reduction of 85%.

[3] Nonroad equipment with diesel oxidation catalysts or similar emission control technology installed as original equipment meets the 20% reduction threshold and is deemed compliant through December 31, 2012.

ii. Beginning January 1, 2013, all diesel nonroad construction equipment on site for more than 10 total days must have either (1) engines meeting EPA Tier 4 nonroad emission standards or (2) emission control technology verified by EPA or CARB for use with nonroad engines to reduce PM emissions by a minimum of 85% for engines 75hp and greater and by a minimum of 20% for engines between 25 and 75hp.

iii. Tier 0 engines are not allowed on site and must be upgraded to Tier 1 and then retrofit with an emission control device achieving the required reduction.

d. Upon confirming that the diesel vehicle, construction equipment, or generator has either a Tier 4 engine or pollution control technology installed and functioning, the developer will issue a compliance sticker indicating the level of emission control. All diesel vehicles, construction equipment, and generators on site shall display the compliance sticker in the designated location.

e. Pollution control technology shall be operated, maintained, and serviced as recommended by the manufacturer.

f. All diesel vehicles, construction equipment, and generators on site shall be fueled with ultra-low sulfur diesel fuel (ULSD) or a ULSD blend with sulfur content of 15 ppm or less.

2. Additional Diesel Requirements

a. Construction shall not proceed until the contractor submits a certified list of all diesel vehicles, construction equipment, and generators to be used on site. The list shall include the following:

i. Contractor and subcontractor name and address, plus contact person responsible for the vehicles or equipment.

ii. Equipment type, manufacturer, engine model year, engine certification (Tier rating), horsepower, plate, serial number, and expected fuel usage and/or hours of operation.

iii. For the pollution control technology installed: technology type, serial number, make, model, manufacturer, EPA/CARB verification number/level, and installation date.

b. If the contractor subsequently needs to bring on site equipment not on the list, the contractor shall submit written notification within 24 hours that attests the equipment complies with all contract conditions.

c. All diesel equipment shall comply with all pertinent local, state, and federal regulations relative to exhaust emission controls and safety.

d. The contractor shall establish generator sites and truck-staging zones for vehicles waiting to load or unload material on site. Such zones shall be located where diesel emissions have the least impact on abutters, the general public, and especially sensitive receptors such as hospitals, schools, daycare facilities, elderly housing, and convalescent facilities.

e. During periods of inactivity, idling of diesel onroad vehicles and nonroad equipment shall be minimized and shall not exceed the time allowed under state and local laws.[4] In the absence of state or local idling regulations, idling shall not exceed three minutes in any sixty-minute period.

3. Exemptions

a. Onroad diesel vehicles, nonroad construction equipment, and generators on site for 10 working days or less over the life of the project need not install pollution control technology. This equipment must be included on the equipment list submitted by the contractor and approved by the developer.

b. If the contractor can prove to the developer's satisfaction that for a particular class of onroad diesel vehicle, nonroad construction equipment, or generator, (1) no alternative equipment with a Tier 4 engine is available, or (2) it is not technically feasible to meet the control level specified above, or (3) installing the control device would create a safety hazard or impaired visibility for the operator, then the contractor may, with the developer's written approval, drop down to a lower level of control.

c. The developer's representative may create an exemption when there is a compelling emergency need to use diesel vehicles or engines that do not meet the contract conditions for emission controls. An example would be the need for rescue vehicles or other equipment to prevent or remedy harm to human beings or nearby property. Meeting contract deadlines is not considered a compelling emergency.

d. Exemptions, if any, from state or local idling laws are specified by those laws, which shall be enforced on site. In locations without prevailing state or local idling regulations, idling for more than three minutes over a sixty-minute period is permitted only under the following circumstances:

   i. When an onroad diesel vehicle or nonroad construction equipment is forced to remain motionless because of traffic conditions or mechanical difficulties over which the operator has no control;

   ii. To bring the onroad diesel vehicle, nonroad construction equipment, or generator to the manufacturer's recommended operating temperature;

   iii. When there are regulations requiring temperature control for driver or passenger comfort and there are no auxiliary power sources available to provide temperature control;

   iv. When it is necessary to operate auxiliary equipment that is located in or on the diesel vehicle or construction equipment, to accomplish the intended use of the vehicle or equipment (for example, cranes and cement mixers);

   v. When the onroad diesel vehicle, nonroad construction equipment, or generator is being repaired, if idling is necessary for such repair; and/or

[4] Idling regulations for the Northeast states are available on the NEDC website at www.northeastdiesel.org.

vi. When the onroad diesel vehicle, nonroad construction equipment, or generator is queued for inspection, if idling is necessary for such inspection.

4. Reporting

a. The contractor shall submit to the developer's representative a monthly report that, for each onroad diesel vehicle, nonroad construction equipment, or generator, includes:

i. Number of hours of engine operation

ii. Any problems with the equipment or emission controls.

b. In addition, the monthly report shall contain certified copies of fuel deliveries for the time period that identify:

i. Source of supply

ii. Quantity of fuel

iii. Quality of fuel, including sulfur content (percent by weight).

5. Compliance

All onroad diesel vehicles, nonroad construction equipment, and generators must be compliant with these provisions whenever they are present on the project site. The contractor's compliance with this notice shall not be grounds for claims as outlined in Section ____. *[developer inserts reference to appropriate section in its standard contract]*

6. Non-Compliance

a. If any onroad diesel vehicle, nonroad construction equipment, or generator is found to be in non-compliance with the contract terms, then… *[developer inserts penalties consistent with others specified in contract]*.

b. Once the contractor has brought previously non-compliant machinery into compliance, the developer's representative shall promptly issue the contractor a written acknowledgment of compliance.

7. Costs

a. All costs associated with the installation of emission control technology **specifically for this project** shall be fully funded, provided that

i. the technology is installed before March 31, 2010, for onroad vehicles and generators and March 31, 2014, for nonroad construction equipment;

ii. the contractor submits documentation, as outlined in Section 2(a)(iii) above, proving by date that the technology was installed for this project and certifying that the expenditure for installation was not previously reimbursed by any public agency or public contract.

b. Retrofits installed with funds from this project shall remain on the onroad vehicle, nonroad construction equipment, or generator for the useful life of the emission control device or the machine.